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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/026,078 | 12/21/2001 | Matthew Philip Aubury | EMB1P072 (44359/08327) | 8266 |

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| EXAMINER | |
|---|---|
| OSBORNE, LUKE R | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2123 | |

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/026,078 | AUBURY, MATTHEW PHILIP | |
| | Examiner | Art Unit | |
| | Luke Osborne | 2123 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/17/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Status*

1. Claims 1-21 are pending in the instant application.

Claims 1-21 stand rejected.

### *Information Disclosure Statement*

2. The information disclosure statement (IDS) submission on 3/17/04 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Objections*

3. Claims 2-7, 9-14, 15-21 are objected to because of the following informalities: Claim 2 as representative of the objected claims begins with "A method as recited in claim 1." The claim should read "The method as recited in claim 1" in order for the claim to be a proper dependent claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Publication WO 00/38087 to Martin et al. hereafter "Martin" as provided by Applicant on an IDS submitted 3/17/04.

Regarding claim 1, Martin discloses a method for estimating a potential performance of a codesign from an executable specification. See Figures 1, 2 and the corresponding portions of Martin's specification for this disclosure. In particular, Martin discloses "a method for estimating a potential performance of a codesign from an executable specification, comprising the steps of:

(a) receiving commands relating to functions [Input Language page 7];

(b) compiling the commands into an executable hardware model [Compilation page 18];

(c) executing the model in a virtual operating environment [Co-simulation and estimation Page 21];

(d) generating profiling data [The simulator can be used to collect profiling information for sets of typical input data. which will be used by the partitioner 7 to estimate data dependent values, by inserting data gathering operations into the output code (Page 22, lines 11-14)];

(e) analyzing the profiling data [Alternatively, some of the analysis can happen on-line during the execution of the program (Page 22, lines 30-31)];

(f) outputting a list of data transfers between at least a portion of the functions [Otherwise a transfer from one of the other functions to the current function is recorded, and the map records that the current function now has a valid copy of the micropage (Page 23, lines 5-7)]; and

(g) outputting an estimate of running time of each function [The result of the execution of a program in this way is , 2-dimensional table recording data transfers from functions to functions. This data can then be further analyzed to give estimates for the performance of given partitions (Page 23, lines 10-12)]" as claimed.

Regarding claim 2, Martin discloses, a method as recited in claim 1, "further comprising the step of outputting a number of operations performed by at least a portion of the functions

[The pans of the description to be compiled into hardware use a behavioral synthesis compiler 11 using the techniques of De Micheli mentioned above. The description is translated to a control/data flow graph, scheduled (i.e. what happening on each clock cycle is established) and bound (i.e. which resources are used for which operations is established), optimized, and then an RT-level description is produced. Many designers want to have more control over the timing characteristics of their hardware implementation. Consequently the invention also allows the designer to write pairs of the input description corresponding to certain hardware at the register transfer level, and so define the cycle-by-cycle behavior of that hardware (Page 19, lines 6-14)]"as claimed

Regarding claim 3, Martin discloses, a method as recited in claim 1, "further comprising the step of outputting a number of context switches between at least a portion of the functions [Otherwise a transfer from one of the other functions to the current function is recorded, and the map records that the current function now has a valid copy of the micropage (Page 23, lines 5-7)]" as claimed.

Regarding claim 4, Martin discloses, a method as recited in claim 1, "further comprising the step of outputting a graph description file for allowing visualization of data flow [This data an then be further analyzed to give estimates for the performance of given partitions, be used to decide partitions, or be presented in a graphical form such as a directed graph) (Page 23, lines 11-13)]" as claimed.

Regarding claim 5, Martin discloses, a method as recited in claim 1, "wherein the profiling data is output to an analysis tool of a hardware/software co-design system [The present invention provides a hardware/software codesign system which can target a system in which the hardware or the processors to run the software can be customized according to the functions partitioned to it (Page 2, lines 14-16)]" as claimed.

Regarding claim 6, Martin discloses, a method as recited in claim 1, "wherein the model is linked to an external library [The system description can be augmented with register transfer level descriptions, and parameterised instantiations of both hardware

and software library components written in other languages (Page 5, lines 8-14)]" as claimed.

Regarding claim 7, Martin discloses, a method as recited in claim 1, "where in the estimate of running time for each function is for a running time on at least one generic platform

> [This particular embodiment supports the following hard platforms
> Xilinx 4000 series FPGAS (eg the Xilinx 4C25 below);
> Xilinx Vertex series FPGAS;
> Altera Flex and APEX PLDS;
> Processor architectures supported by ANSI C compilers; and the following soft platforms each of which is associated with one of the parametrisable processors mentioned later]" as claimed.

Claims 8-14 recite the computer program limitations of method claims 1-7, thus are rejected for the same reasons as claims 1-7.

Claims 15-21 recite the system limitations of method claims 1-7, thus are rejected for the same reasons as claim 1-7.

## *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke Osborne whose telephone number is (571) 272-4027. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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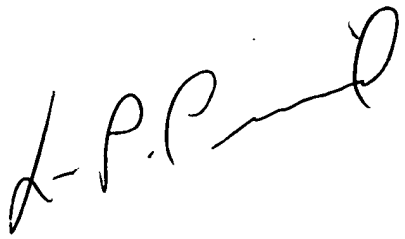

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